

Document #1

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Mr. Chris Randolph
Aquatics Program Manager
Idaho Power Company
P. O. Box 70
Boise, ID 83707

Re: Forest Service's comments of Idaho Power Company's "Detailed Aquatic Study Plans"

Dear Mr. Randolph:

The enclosed document will serve as the Forest Service's (FS) response to Idaho Power Company's (IPC) request for comments on "Detailed Aquatic Study Plans" for the relicensing of the Hells Canyon Complex (HCC) Hydroelectric Project (FERC #1971). FS review of the study plans is important to ensure that FS direction, Policy, and Federal Laws that govern FS operations are considered and incorporated into the relicensing process.

Specific to the HCC project relicensing efforts are the Wallowa-Whitman and Payette National Forests Land and Resource Management Plans (LRMPs) and the associated amendments (including PACFISH and INFISH). The LRMPs direct the FS to give management and enhancement of aquatic resources and protection of fish habitat priority over other uses. The LRMPs also provide direction for the recovery and maintenance of viable and diverse habitat and populations of aquatic, terrestrial, and riparian dependent species (including listed and non listed species).

The FS has developed and presented to IPC a working document titled "Information Needs Assessment" (INA), which outlines FS direction, issues, questions, and study needs. The Forest is nearing completion of the Existing Information Analysis (EIA), an analysis of existing information used in the development of potential protection, mitigation, and enhancement measures. These two documents will assist the FS in determining consistency between the HCC relicensing effort and FS policy, and provide the basis for agency recommendations under the Federal Power Act.

Members of the FS aquatic team, both at the Forest and Regional levels (including research), have reviewed and provided comments in the enclosed document. In addition, the following comments are offered in relation to the study plans.

1. In general, the individual studies seem well thought out, with attention to identifying overall study objectives, specific questions, methods, etc. Attention appears to being paid to such issues as sample design, stratification, data analysis, etc.
2. The dedication, enthusiasm, and professionalism of the IPC resource specialists who designed, drafted, and presented the proposed study plans is very evident. The tone of the discussions was quite positive, and the presenters seemed genuinely interested in having their work reviewed, although the schedule permitted only limited time for discussion.
3. Using flow models as a common reference point for the many studies will encourage a common language and focus for the individual pieces, and may provide a helpful tool for simulating alternative scenarios. However, see #5 below.

4. The Forest Service is concerned about the unequal level of development of some of the projects. Pieces like the sediment/geomorphic work that underlie much of the aquatic effort is lagging behind in terms of study plan and concept development, and is not likely to be ready much before the start of the field season in June. Much of the IFIM modeling, habitat classification, and stratification of sampling and modeling sites for other aquatic studies could and should be tied to the physical template, yet we have not yet seen how the basic characterization of the system will be accomplished, nor how the many pieces that rely on that characterization will be fit in. This is a high priority item.
5. Many of the proposed studies, and all of the integration discussed, rely on modeling (mostly of flow or water quality) to provide the common framework. This is an issue because:
 - a) Some/most of the models are either untested or uncalibrated for the Snake River, and should be viewed as a bit of a gamble in terms of their reliability and whether they will actually be useful;
 - b) The models are in different stages of development and degree of acceptance by the science community. For example, predicting inflow/outflow hydrographs and routing flow down channels has had many decades of work behind it and can be well calibrated/validated against real data. On the other hand, IFIM/PHABSIM type models, though they have been around for decades, are suspect in the ability to actually predict fish use of habitat, particularly on big rivers. The biological models involving fish interactions, etc., are even more experimental.
 - c) How will all this information of varying quality and reliability be synthesized? Heavy reliance on modeling the response of various resources to different flow scenarios, while necessary from the standpoint of evaluating future flow regimes, is likely to become the dominant effort, rather than understanding how the system actually works. A more balanced approach between prospective and retrospective studies would be helpful. In particular, trends of key resources (sediment, flow, fish, habitat) need to be well established before all this modeling takes place. The models being used (1- and 2-d flow models, fish habitat models) all assume that the river environment is static with time. While this may be appropriate for some models and issues, it clearly is not for others (i.e., sediment trends, channel morphology, etc.).
6. It's not clear how new information will be used by the process. How will insights gained from the individual component studies be used to inform the AWG and the process for future management and flow scenarios, especially when those scenarios are being decided before much of the work gets done?
7. It was difficult to understand how much work has already been done and what this work has discovered. Existing condition and status reports are important to the process (Similar to Ralph Meyer's and the USGS Metal and Agricultural Chemical reports).
8. Peer review for all new studies and any study results is critical to the process. In spite of the tight timelines, it is important that the study process (ongoing and new) be viewed as a learning enterprise. Future study plans should be developed in coordination with members of the Aquatic Resource Work Group.
9. It is important that IPC aquatic scientists coordinate with the terrestrial, cultural, recreation, and economics work groups and other IPC scientists so that data collection needs can be shared and

pooled. Work being done by aquatics has links to riparian dependent species, wildlife, and human uses within the river and reservoirs.

10. It is important to start to develop a long-term monitoring strategy as these studies progress. This monitoring strategy could be incorporated as an overall element of the study program.
11. Document all assumptions and limitations of each study (methods, equipment, results, etc.). This documentation will allow the AWG to understand the constraints inherent in the project.
12. The flow and sediment studies should also analyze effects over full range of operating flows through HCC. This range is from 5000 cfs to 90000 cfs. Need to determine if there is a need to analyze the effects of events over 90000 cfs.
13. The description of the work in the study plans leads the reader to believe that they are quite comprehensive and use best scientific methods. However, it is difficult to determine the actual magnitude of the work described in many cases. Numerous literature searches are prescribed. The actual amount of time that will be devoted to the effort and the subsequent analysis is difficult to determine. Although each study plan identified a primary researcher, who will do the work is not described. Studies should include a projected annual budget. Projected budgets, work-months, equipment, and travel are not included in any of the study plans. Inclusion of this information would allow the AWG to better evaluate whether the studies meet the objectives.
 - a) It is recommended that IPC attach a work schedule with number of estimated work-months, and estimated annual allocation of dollars be included in the study plans. In addition, a brief description of worker qualifications, workers names, and workers titles should also be included in each study plan.
14. Several study plans refer to other studies that have been contracted to firms such as Battele NW Laboratory. The contract specifications or study plan associated with the contract work should be attached to the primary study plan for AWG review and understanding.

We appreciate the efforts of IPC in completing these study plans, and will continue to work with the AWG to help develop protection, mitigation, and enhancement measures that are consistent with forest plan direction. Our expectation is that IPC will incorporate our comments into the current planning process with the objective of minimizing the need for Additional Information Requests upon completion of the Draft License Application.

If you have any questions or concerns regarding these comments, please contact me at (541) 523-1316.

Sincerely,

/s/Lynn W. Roehm

LYNN W. ROEHM
Hydro Coordinator

cc: Dave Wegner, Aquatic Work Group Leader
Service List
IDT

**Hells Canyon Complex Relicensing
Wallowa-Whitman National Forests
May 1999**

Forest Service Response to Idaho Power Company's
Detailed Aquatic Study Plans

1. Feasibility of Reintroduction of Anadromous Fish Above or Within the HCC:

Page 10: The problem statements does not address the original issue of predation potential by both native and non-native species in the event of reintroduction. In particular, the predation potential by warm water species on the early life stages of reintroduced species has been clearly documented in the scientific community. This study should be elaborated on to address this issue.

Page 11: There needs to be a clear relationship established for how lamprey fit into the ecological framework of reintroduction. At this time, the study appears to address Chinook salmon and steelhead.

Page 12: The study objective # 3 suggest that the run size at the time of Brownlee Dam closure is the point of reference for a future condition. If this is true, this needs to addressed in terms of a recovery plan for the species in question. It may be that the this estimate is only useful in developing a trend.

Page 15: Under methods Section IV, production potential should also include habitat for Pacific Lamprey.

In addition the potential of habitat lost by inundation needs to be addressed in some detail, to allow for adequately developing mitigation for ongoing effects of the project.

Is the Downstream database developed to be utilized for all questions regarding issues upstream of Hells Canyon Dam?

Page 17: Although the utility of GIS in delineating and describing topographic characteristics is well documented, the value of 30 meter pixel's severely limits the ability to identify habitat attributes such as barriers and other micro-habitat units. We would suggest evaluating the need to identify specific areas where more refined topographic information may be necessary.

Criteria that are developed to address historic distribution need to have the assumptions clearly defined and described prior to the development of the conclusions.

Page 18: One of the important historic developments that need to be portrayed relative to the reintroduction question is the role of hatcheries in time and place.

Page 19: It appears that USGS will be utilized as a consultant in evaluating trends of water quantity and quality. Is there a formal agreement between IPC and USGS to complete this work. If so, the Forest Service would like the opportunity to review the project proposal and expected outcomes.

Page 19: Existing Habitat Assessment: ``These types of data may allow some specific stream or stream segments to be delineated as at least suitable or unsuitable to support anadromous fish'. This does not seem like a very effective means of meeting the study objectives.

Page 20: How will indicator species such as exotic fish be used to indicate habitat conditions?

Page 21: This study suggests that additional habitat information may need to be collected from existing sources. How will this information be sorted and displayed in terms of confidence and consistency? This is an appropriate place to consider utilizing a geomorphic characterization as a foundation for habitat analysis.

Specific field studies are proposed by IPC to assess habitat quality. Its unclear what objectives are defined and why its limited to just the mainstem of the Snake.

Page 22: The reliance on PHABSIM data that was developed for CJ Strike reach may be limited to the utility of the data set relative to other reaches that were historically important for fall chinook. At the minimum, the studies cited as references should be provided for review. In addition, the habitat suitability criteria relative to the lower snake needs to be provided as well as the original data set for review.

The proposal to develop artificial redds appears highly experimental and should be developed in a peer reviewed process. In addition to a number of concerns about the science of the study, we have reservations that the reach proposed for study truly represents historic potential habitat. As we understand, this method has been utilized on the Hanford reach, which appears to have distinctly different habitat characteristics than the upper Snake. The fact that this study will be conducted in a river with managed flows and limited sediment input needs to be addressed.

Page 22: Habitat Assessment for the mainstem identifies IFIM as a principle method of assessment. The IFIM study design and model needs to be reviewed for adequacy. There is a discussion on monitoring D.O. and other parameters in artificial redds. Hoffman (1986) is cited but this citation is not listed in the Literature Cited Section. Did Hoffman sample artificial or natural redds? Is there a correlation between the two?

Page 24: The study provides four scenarios to be analyzed for reintroduction. They are well founded. However, another scenario should be considered. This would be a sub-set of number 3: ``Best estimate of production potential today based on quality of habitat and assuming fish could be passed through the hells Canyon Complex and all other barriers were in place." The sub-set (alternative 3b) would be used to address the habitat from the standpoint that there is the opportunity to improve the existing condition to a Desire Condition. It is possible that scenario 3 would underestimate the potential of the habitat to produce larger numbers of fish several decades from now when various State and Federal laws governing Clean Water and Habitat have had time to take effect.

Page 25: Alternatives for upstream passage need to ensure that the entire suite of native organism's impeded by the project are addressed at some level.

Page 26: Has the aquatic workgroup evaluated the draw-down studies in 1996 during which they used an ADCP to model currents in Brownlee to assess the potential success of out-migration through the reservoir. Although the situation is different, PGE/Pelton RoundButte used the Doppler and it didn't work well. The researchers reverted to developing a mathematical model to obtain an accurate depiction of prevailing currents through the reservoir. This information was vital to evaluate different downstream passage scenarios.

Page 27: Disease Risk Assessment. This appears to be inadequate to address the issue. At the Pelton/Roundbutte dam this was an expensive, multi-year study that evaluated the presence of pathogens upstream and downstream of the project, the susceptibility of native stocks of interest to various pathogens and the presence of alternative hosts upstream of the project. The same level of detail may not be necessary but the States are unlikely to agree with the level of analysis proposed by IPC. It is an especially important issue at Hells Canyon since hatchery fish would be used for reintroduction. Hatchery fish are known to be high risk as disease vectors when used for re-introduction purposes.

Page 28: Development of Alternatives for Re-Introduction. It is unlikely that one session of the AWG would be adequate to synthesize information and develop alternatives. This may be a long and arduous process. Multiple meetings over the course of at least a year may be needed to do an adequate job.

Page 29: The study suggest that production potential estimates will be developed by the end of 1999. Without the details of how these numbers will be generated, it will be difficult to support PME's that address this issue.

2. Evaluation of Anadromous Fish Potential Within the Mainstem Snake River, Downstream of the HCC of Reservoirs (RM 149 - RM 247)

Page 53: A study by USFWS and Battelle Northwest Laboratories is noted: The availability of habitat, in relation to discharges from the Hells Canyon Complex will also be modeled, and an estimate of production potential will be developed. The AWG should receive a copy of this study plan. If this is a contract a study plan with deliverables should already exist.

This study never addresses species other than Fall Chinook, Studies that address aquatic habitat below the HCC need to include the range of aquatic species both native and introduced.

A discussion of "later modeling activities" relative to fall chinook salmon suggest that additional studies are planned. What are these specific studies and how will the information provided from the initial studies be used to develop additional study needs? In addition, if additional studies are preordained, how can production potential estimates be developed.

Page 54: A model of rearing habitat availability for juvenile fall chinook salmon is proposed to be developed by USGS. Again, the use of a single lifestage, single species model may not be appropriate in the evaluation of ecological integrity.

Page 58: 6) Identify potential access limitations into Snake R. Tribs. for spawning anadromous fish. It appears that little is known about which of the smaller tribs. are likely to be affected by river level fluctuations are important for different species. In general this part of the study design is poorly described. How are they proposing to analyze this effect? What tribs. are they selecting for analysis?

An additional objective of the study should be to identify the relationship of tributaries to the Snake River in terms of access for the full range of species and life history requirements, relative to the management of flow regimes. This study needs to be developed further in terms of scope and extent of analysis.

Page 62: Flows in the lower reach are suggested to be "more directly influenced" by regulated discharges from HCC. What are these influences, and how are they related to aquatic habitat? It is noteworthy that there appears to be more changes in the flow regime below the confluence of the Salmon River during some periods, when, the opposite may be expected. If this is the case, this issue should be explored in some detail.

The point that the anadromous salmonids only use the mainstem river as a migratory corridor suggests that they have access to some area, when in fact they have nowhere else to go. What is the literature citations that support this statement?

The observation that water temperature is "probably the primary abiotic factor that controls the quality of the migratory corridor" may in fact be true, however, there is little information available to ascertain the adequacy of the study as proposed. A geomorphic characterization of the watershed should be the principle tool to assess the relative importance of abiotic factors on aquatic habitat. This will also provide the foundation to assess the adequacy of the proposed temperature monitoring stations.

The limitation of adult access to tributaries is just one of the factors that needs to be addressed in relation to flow regimes. An analysis of the biotic and abiotic factors that are linked to the connectivity of the tributaries to the river under various flow scenarios needs to be addressed.

Page 64: The issue of water quality relative to downstream habitat should be expanded to evaluate the effects on the full range of aquatic species below HCC. In particular, pH should be examined to assess nutrient related issues in the river.

The proposal to assess spawning habitat for fall chinook needs to be assessed relative to the effects on the full complement of aquatic and riparian dependent species affected by the flow regime.

Page 65: Deep water spawning surveys. Is two years of data collection enough? The study states that sites will be selected randomly from the pool of 89 areas but it does not say how many sites will be evaluated in 1999. Will selection be a straight random sample or will it be stratified based on whether it is a pool tail-out, contiguous area with known shallow spawning site or deep run? How important is each of these types of sites relative to the other types?

The utility of comprehensive spawning surveys that did not begin until 1993 needs to be addressed, relative to the documented changes in some components of the river morphology prior to that time. Although aerial and video searches may provide some estimates of redd density at the time of the survey, it will not address the fundamental question of a fully seeded depositional feature. A geomorphic assessment is critical to identify those reaches where deposition would be expected and actually occurring. This could also offer answers to the question of whether redd superimposition may be occurring, since these surveys are only done late in the spawning period. A fundamental question that needs to be addressed is the establishment of a baseline from which effects can be determined.

Page 66: A sample of 2 years in the past decade does not suggest a statistically valid approach, and may not reflect natural variation, particularly after the floods in 1996 and 1997. A study such as this needs to address the amount of variation in both biotic and abiotic factors that can skew the results. If this information is to be used in developing estimates of habitat, there needs to be some assurance that the sample size is adequate and the methods repeated over time to allow for natural variation.

The deep water sampling methods identifies criteria for substrate size and depth. What is the basis for this criteria, and how is it applied. Without a relationship of substrate depth and velocity, its difficult to believe that this adequately provides a representative sample.

The proposal to utilize "a standard PHABSIM modeling approach" on 12 sites between two entities is completely inappropriate with the conventions of the Instream Flow Incremental Methodology (IFIM) approach. Utilization of PHABSIM without conducting a scoping exercise designed to identify and select representative reaches limits the applicability of the data stack and provides for large scale bias and error in the model.

By utilizing PHABSIM in a single species/single life stage analysis with a very limited sample, the opportunity to adequately use the results for habitat analysis will be extremely limited and highly criticized.

Page 67: A number of specific questions on the methods employed in the PHABSIM need to be described in detail, to assure quality control. In particular, substrate characteristics need to be firmly standardized.

The concept of estimating habitat availability as a validation of PHABSIM modeling is not an appropriate use of IFIM and should not be considered as a valid study.

The study component that addresses Hyporheic Quality suggest a method employed by Battelle Labs. Please provide us copies of their project reports and other documentation that supports this as a valid study applicable to the Snake River. Its our impression that the utility of a study designed for the Hanford Reach may have limitation when applied to the channel morphology of the Snake River. An additional concern is that it appears that five study sites have been chosen to assess the hyporheic environment with no basis for sample selection. As stated repeatedly in prior comments, utilizing a geomorphic perspective to select sample sites should be incorporated into this assessment when ever possible.

Page 68: ``Relevant literature will be used to identify potential interactions with native and non-native species, specifically northern pikeminnow and smallmouth bass. Research by the USFWS and University of Idaho is currently underway that specifically addresses predation of these fish species on juvenile anadromous fish. Results from this research will be integral to this section of our study package.' Again, this study plan should be provided to the workgroup. The magnitude and effort needs to be known to provide credibility. This is one of the major issues for the Forest Service and it does not seem to be covered adequately.

More than a literature search is necessary for purposes of documenting the actual impacts. Some of the information gathered during the warmwater fish community sampling might be useful in terms of enumerating species numbers and documenting size, growth, movement and activity of potential predators and competitors. However, frequent stomach sampling is necessary to determine dietary preferences. Sampling should occur near the major tribs to the reservoirs since this is where native salmonids are likely to be most heavily influenced. There is no mention of sampling downstream of the complex despite the fact that this is where our largest issue of concern is centered. It is noted that the study has expanded the sampling to upstream reaches of the Snake. Why not downstream reaches too?

What analytical methods will be employed to evaluate the information obtained in the Hyporheic study?

Page 68: The rearing habitat hypothesis is limited to juvenile fall Chinook. What about other species? Do spring Chinook, steelhead, bull trout etc. move out of tributaries to rear in the Mainstem? Is that being addressed in other studies?

The issue of juvenile rearing habitat needs to be examined for the suite of species that have evolved in the project area. Since the Snake system has a number of unique qualities in terms of both flow and habitat, the use of literature as a baseline is not appropriate without a level of field verification. Reliance on a system of models and GIS products to address rearing habitat will only serve to identify additional questions, not provide answers.

Page 69 - "Pacific Lamprey - a literature review will be conducted to document freshwater life history and habitat requirements of Pacific lamprey." This does not appear adequate. Work to determine if any lamprey still exist or are using the area below HCC needs to be conducted in the field. How much effort will be put into this work. Is any attempt being made to identify important lamprey habitats while IPC scientists are collecting habitat and substrate data for the other species of interest? A statement of estimated time and funding devoted to this would lend credibility. It appears to be less than a serious proposal to investigate the species, its current situation and real or potential affects of the HCC.

It appears that USGS has the responsibility to develop habitat criteria as part of the rearing habitat issue; How does the USGS propose to accomplish this? Are they using PHABSIM as the method to address this, and if they are what time series do they plan on evaluating. At a minimum mean daily flows should be utilized in this exercise.

Page 74: Item 11 addresses completion of GIS database of all known potential spawning gravels. The first question of how potential is defined is critical in habitat analysis. The second question is what species is spawning substrate identified for. From our perspective, the continued tone of single species management is not consistent with management of National Forest policy.

Pacific Lamprey are an integral part of the aquatic ecology in the Northwest. Although it is understood that limited information is available, this species needs to be integrated into the analysis of the aquatic ecology throughout the licensing process. At a minimum, a habitat analysis should be completed as an initial step to ascertain the potential impacts of the HCC on this species.

Overall, the time allocated to accomplish the identified studies appears to be vastly under what would provide an adequate scientific study plan.

If in fact the utility completed all these studies components to a credible peer reviewed product, the ability to integrate them is highly questionable, based on the matrix concept presented in last AWG meeting.

Page 76: There are a number of deliverables identified that although valuable in concept, have severe limitations without extensive details in methodology. In addition, a number of assumptions have been developed by the applicant that need to be discussed in an open forum of interdisciplinary and interagency people.

3. Evaluation of Idaho Power Hatchery Program

This study as designed should provide a basis for Columbia River fisheries authorities to determine how to best use the IPC hatchery program. This appears to be a sound scientifically based approach to the success or failure of the hatchery over the period of its existence.

The key issue for reintroduction is going to be determining the fitness of hatchery stocks for recovery efforts (on page 85). What will the electrophoretic data taken from the hatchery fish be compared to? It should be compared to data from wild, native runs to evaluate what degree hatchery stocks have diverged from wild stocks.

However, the primary question that the Forest Service needs answered is not addressed. The interaction of the IPC hatchery program with wild fish is not addressed. The impact of straying and disease of these fish on wild stocks currently using the Grande Ronde, Imnaha, Salmon and Mainstem Snake need to be addressed. The Forest Service is consulting with NMFS on wild salmon and steelhead stocks and the impact of a large hatchery program sharing the same river cannot be ignored. If it is determined that the hatcheries are having an adverse affect on wild fish the NMFS will need to issue terms and conditions that may affect the 1980 FERC mitigation requirements mentioned in paragraph 2, page 80 and page 84-85.

4. Status and Habitat Use of White Sturgeon in the Hells Canyon Complex

Page 94: sampling Design. This study plan talks about random selection of transects but doesn't say how many transects total will be sampled or what percentage of the total habitat that represents. Next paragraph states that no sturgeon were caught between Celebration Point and the upper end of Brownlee. Is this a function of habitat preference or is it related to water quality issues in that reach? A comparison of the sample sites to a geomorphic characterization would provide an assessment of the representative nature of the sample size. This should be considered as part of the 1999 study plan. Since sturgeon numbers are very low above HCC, improvements to water quality that would provide access to more habitat could be an important mitigation measure.

Page 99: Were the proceedings from the sturgeon workshop held in June 98 ever published? Under parameters of physical habitat, habitat type i.e., plunge pool, rapid, eddy, run etc. should be listed.

Page 100: Its unclear how the existing IFIM study (Actually only PHABSIM) will be used to evaluate the Swan Falls Reach. Is there an approach established to assure that these reaches are similar in channel morphology and flow regimes to extrapolate for spawning habitat.

As stated numerous times, what has been proposed to date is not an IFIM study. It is a number of individual studies designed to answer specific and non integrated questions.

Page 101: Telemetry. Will sturgeon fitted with transmitters from all reaches in the study be included in the small sample? How many will be in each reach?

Page 103: In the year 2000 tomlin, there is another reference to "Obtain Findings from IFIM". This suggests once again that there is confusion between the IFIM Process or methodology and the suite of tools that may complement the process.

Page 104: Deliverables. Since this study has been going on since 1996, why have no progress reports been written? Waiting until 2001 to summarize all of the information collected will deprive the AWG of important data that would be useful to them throughout the collaborative process. The deliverables

described lack integration with a number of dependent and studies related until completion of the study in 2001.

There should be some steps identified throughout the process that allow integration and adjustment based on findings and new information. This is necessary as a means of assessing whether the work is meeting the issues raised by the group. As it stands right now, the AWG will not get anything but some sounds bites until its over.

An important component of the life history of the White Sturgeon may have been overlooked in the development of this study. The effect of channel morphology and the loss of fine textured materials in the bed and bank could be significant in terms of holding, feeding and resting habitat. Anecdotal evidence suggest that this may be playing a role in the larger size classes and should be explored.

The study plan should attach projected work months, budget, personnel and description of their experience.

5. Status, Distribution, and Limiting Factors of Redband Trout and Bull Trout Associated with the Hells Canyon Complex

Page 113: Based on available information bull trout and presumably red band trout utilize the mainstem of the Snake River below Hells Canyon dam. The lack of a study that addresses this component of the aquatic system is not acceptable. HCC operations, through flow modification and sediment retention has the potential to adversely impact this population. Information must be provided on movement, habitat utilization and population distribution within the canyon and rivers and streams that are tributary to the system, including downstream, within the impoundments and upstream to the limits of historic distribution.

Page 118: In the description of Oxbow Reservoir the shorelines is described as primarily rock, with the exception of areas of alluvial input. In order to adequately assess habitat suitability the size and location of these features should be provided.

Error: Page 118, paragraph 2: Reservoir length (62 feet), change to 11.7 miles (Same error on page 150).

Page 119: The study of tributaries should address all the tributaries above, below and within the project where historical habitat is known or suspected. By immediately establishing a prioritization based on known occurrence, we will not be informed of the potential habitat available as well as the existing quality.

The approach and sampling for the individual tributaries has a level of variability suggested. What is this variance and how will it be rectified when this information becomes integrated.

Page 120: How was the sampling protocol developed for reservoir sampling? How will this information be incorporated into an analysis of flow scenarios or other operational alternatives. It appears that this will only provide a snapshot of the population during the sampling period. The concept of sampling eight tributaries each month may give very diverse results that limit the ability to interpret the information in a statistical manner.

Page 124: Reliance of USFS and IFDG information to assess the populations of bull trout in Indian Creek may not provide the level of information required to adequately assess the location and distribution in the system.

Page 127: Presence/Absence survey protocol. Parameters and methods are based solely on bull trout distributional gradients.

Page 128: Using only daytime snorkeling as a means to determine abundance of bull trout is questionable. If this is based on the 9 degree C standard, what are the temperatures in the tributaries to be sampled?

Page 130: Surgery to implant transmitters into bull trout should be first extensively practiced on hatchery fish. In several tagging studies, poor surgical techniques were a major mortality factor.

Page 131: Genetic analysis is wholly directed at hybridization issues. It is important to know if these populations all belonged to the same meta-population prior to the construction of HCC. This would have major implications in terms of fish passage efforts.

The study does not adequately address the fluvial bull trout using the Mainstem Snake from Hells Canyon Dam down to the Salmon, Imnaha and Grande Ronde Rivers. The affect of dam operations on bull trout life history in the Mainstem is unknown. The Forest Service needs to have assurances that the fluvial fish moving out of the tributaries in the Mainstem are not being adversely affected.

Our assumption is that the Hells Canyon reach provides an important component of the life history of fluvial bull trout in the Snake River system. Little is know about this fluvial population. IPCs' operation, through flow manipulation and sediment catchment, has the potential to adversely impact this population. Data needs to be collected on movement and habitat use of these fish both within the canyon and in rivers and streams tributary to the Snake. We would like IPC to sample fluvial bull trout in the Hells Canyon reach, collect pertinent life age and growth information and radio tag a sub-sample of these fish to determine movements, particularly related to spawning locations and timing.

The use of Sheep Creek as one site for sampling below the dam will provide useful knowledge and is encouraged. Adult bull trout using the Mainstem near the Imnaha or Salmon also need to be tracked to determine how they react to flow, temperature and other HCC affects. Re-licensing the dam without adequately answering this question to some reasonable degree would not ensure the FS was meeting its ESA obligation or 4e authority.

Opportunities to capture and radio tag fluvial fish exist on the Imnaha and have been discussed with IPC biologists. ODFW tagging studies on the Grande Ronde may also be useful in answering the questions of Mainstem bull trout life history requirements and dam affects.

Page 133: A number of named tributaries were identified to be assessed for barriers relative to the operations of the HCC. Its important to consider these tributaries relative to the full range of species and complex life history requirements when undertaking this review.

Page 134: From the information provided in the study proposal, its difficult to understand how an assessment that incorporates biotic and abiotic factors into a limiting factors discussion will occur. The integration of all this information is the final product for this study and should be provided as part of the proposal.

6. Hells Canyon Complex Resident Fish Study

This study primarily is concerned with the affects of the dams on Crappies, Smallmouth Bass and Catfish. However, Page 161, 1) states that the status of fish community within the Hells Canyon

Complex will be addressed. After reading this statement and the report it is not clear whether all the fish species will be reported or the fish being referred to are bass, crappie and catfish. This needs clarification. A list of fish species present in the reservoir needs to be provided with relative abundance (i.e. uncommon, common, abundant). Primary concern of the Forest Service is that all native species are present and well distributed.

Page 145. The objectives defined in this section do not appear to be carried forward through studies, particularly #1 which addresses fish community.

Page 151. The methodology proposed sampling random sites to determine species composition and relative density of the site. The use of a random sample approach assumes that samples are similar in composition and character. What assumptions are utilized to assure that the random approach provides representative samples?

Page 162 . ``[This report will include water level fluctuation impacts to resident fish (bass, crappie and catfish) spawning (timing, site selection, nest densities), and early rearing success.]" This statement can be taken to imply only these species are being covered. What about the impacts to all the other species present?

It does not appear that this study will meet the FS needs in terms of evaluating the effect of these species on native fish.

7. A Survey and Study of Benthic Macroinvertebrates in the Hells Canyon Complex, Including Upriver and Downriver Adjacent Reaches.

The assumption that the benthic community is one that has evolved from the time of regulation and to hydropower operations needs to be supported by a credible body of evidence. In particular the results of the macroinvertebrate monitoring in a number of areas suggest that there is a downward trend in the community below. If this study is designed to assess the existing population, the objectives may be met, however it will not address the objectives of the Forest Service to restore a properly functional aquatic community that will be self sustaining over time.

As long as mollusks, clams, aquatic gastropods, macro and micro invertebrates are all covered under this or another study, the study is consistent with Forest Service Questions and Study Needs as documented in the Forest Service INA document.

Bioaccumulation of heavy metals and agricultural chemicals into the lower trophic levels are a concern of the Aquatic Work Group. It is recommended that this analysis be conducted in Brownlee Reservoir. This request is consistent with Forest Service Question #2,3 (INA).

One objective statement in the Detailed Study Plan (IPC 1999) states "Determine if fish food requirements are met in the reservoirs and the river below Hells Canyon Dam for white sturgeon, bull trout, fall chinook smolts, and resident reservoir fish." This portion of the study is important but fish-eating wildlife and riparian dependent species also need to be considered. This study needs to be coordinated with the Terrestrial Working Group (Forest Service Macroinvertebrate INA).

Page 178. The concept of biome as a stratification process needs much more specific criteria prior to being acceptable as a descriptive habitat unit. There is no indication that these reaches have physical habitat similarities that are indicative of macro communities.

Page 179. The segmentation of habitat during this study needs to be based on a geomorphic characterization that is at the scale necessary to evaluate change in the benthic community.

It appears that the selection of three tributaries for sampling is arbitrary. What is the basis for this selection, and why is the sample size so small?

Page 180. The proposal to map the biome classification needs to be described in a manner that allows comparison of overlapping habitat with other beneficial uses in the system.

Page 180. Sampling Strategy. Sample sizes have yet to be determined and will depend on the effort that can be completed in one year with available manpower and equipment. What if equipment limitations are severe, is the study even viable? This also talks about dredging in rivers and tributaries. Which tributaries? How were they selected? How many sites? How often will they be sampled? Once per year is not enough to delineate a benthic community. There is a reference to biological assessment metrics used for evaluating pollution effects. Which metrics will be used? Will any additional information on water quality, flow, habitat be collected at these sites?

Page 181. The limited study proposed in the reservoirs suggest that this information will be of limited value. Six samples sites in over 90 miles of reservoir provide nothing more than a subjective glimpse at the issue.

Page 181. Reservoir Survey. Two transects will be selected in each reservoir based on similarities in geology and terrain. Why are these similarities important? Are other parameters more important when selecting transects ie; development, depth, substrate etc? Are zooplankton being evaluated in the reservoirs or just benthos? Plankton may be a more important indicator of food sources for fish, especially in stratified reservoirs.

page 181 - Load Following below HCC. Are these three sites enough? How were the three sites chosen? Seems to be based on access and may not be the best choices. What about doing the same sites Brusven chose in 73 for comparison purposes? The study plan mentions that results will be used to fill knowledge gaps for fall chinook smolt food sources. Documenting presence of certain Macroinvertebrates does not necessarily tie these species to use by target fish. Are the samples placed in areas where juvenile chinook are known to occur? Are chinook

8. Hells Canyon Instream Flow Assessment

Page 189. The study presented suggest that the principles of IFIM are being applied. As defined by the Instream Flow Group (USGS), the Instream Flow Incremental Methodology (IFIM) process is designed to focus on issue resolution. It consist of four interrelated activities or phases:

Problem Identification and Diagnosis

Study Planning

Study Implementation

Alternative Analysis and Problem Resolution.

Although Idaho Power has been forthright in encouraging issue identification, to date the development of study plans that address the issues has been controlled by the applicant. In addition to lack of involvement with interested parties, the IFIM process to date is focused on single species, a single life stage efforts through the use of PHABSIM and other tools.

We believe the opportunity still exists to conduct IFIM as it was designed in a collaborative manner that will meet the objectives identified in the AWG. This will require engaging an interdisciplinary team of professionals from the AWG as well as terrestrial and social groups to evaluate the proposed study plans and modify them to ensure that all the issues regarding flow management are met.

Page 191. Although we recognize that the effort Idaho Power has committed to assessing white sturgeon and fall chinook is substantial, the overarching issue of the ecological integrity of Hells Canyon above, within and below the complex requires a much broader approach to evaluating a very dynamic riverine environment.

Page 192. The instream flow assessment as described using a two-dimensional analysis for channel geometry and flows at the scale proposed will not address the issues identified by the various work groups in the matrix.

The concept that the application of this modeling process to other species based on the available of existing habitat criteria is outside the tolerance of an IFIM process, without a level of validation that has not been proposed.

Page 194. The study area proposed for a flow assessment is not consistent with other studies that appear to be flow dependent, particularly the study relative to anadromous fish which evaluates habitat from Lower Granite Reservoir and includes the Grande Ronde (Page 61). At a minimum, the study needs to address the area encompassed by the indicator species.

The preselection of six sites in over 60 miles of river suggest that phase two of the IFIM process has not been considered. While its understood that these sites have specific resource issues associated with them, there is no indication that this sample represents any component of the river to any extent. The six sites selected for cross-section analysis may not be representative of the river (for example Tin Shed). The selection of boundary conditions based on an uncalibrated flow model will limit the utility of the results in predicting aquatic conditions.

Page 195. The notation that "this model would not be the primary tool used to simulate localized physical conditions" suggest in the next sentence that a more complex river model will applied. What is this model based on and how will be developed and calibrated to address habitat for a highly diverse assemblage of aquatic and riparian dependent species.

Page 196. The attempt to develop 2-d information for river is commendable, however the limitations of flow and substrate information need to be displayed. A review of the underwater video procedure suggest that no information is available with regards to anything but the surface layer.

The discussion of habitat suitability needs to be addressed in term of habitat preference or potential and needs to be done in conjunction with time series analysis.

Page 197. The reliance on habitat criteria for species other than white sturgeon (Hells Canyon studies) is totally inappropriate without a level of validation that has some statistical significance.

The proposal to initiate a Channel Type Classification is the initial step in developing a study package. As stated in previous meeting of the AWG as well in conversation with a number of Idaho Power staff, the Forest Service is willing to take an active role in accomplishing this effort.

Page 198 . The concept of evaluating change associated with load following has a number of positive benefits, however the limited number of sites of a preselected nature as well as the inability to assess changes in channel morphology as a result of variable flow regimes may limit the utility of the information beyond those specific sites.

Page 201. The deliverables described in this study do not address the issues and objectives listed in this study. The concept that six study sections selected with bias may be utilized to evaluate alternative flow scenarios needs to be discounted until such time as the applicant can support the representative nature of these sites.

The Eastside Assessment team has done a lot of characterization and GIS work for the Columbia and Snake River Basin. It may be helpful to contact the team to determine what information and GIS products are available.

The routing of the hydrograph, 1-d and 2-d modeling, as well as channel classification, and behavioral experiment should be done at the full range of operating flows of HCC including peak flows. Analysis at just 30000 cfs and under (load following) doesn't reflect present operations. Flows have exceeded 30000 cfs in twenty of the last thirty two years operating HCC (reference U.S.G.S Historical Streamflow Daily Values Snake River at Hells Canyon Dam Sta. 13290450, 1965 to 1997).

9. Oxbow Bypass Minimum Flow Evaluation

Page 211. As stated previously, the IFIM process has not been developed to the point that habitat models are identified for use, other than by the applicant. While we recognize the difficulty involved with habitat modeling in a reach like this, the concern that the eight sample sites are representative exist. We would like additional information on how these sites are selected, as well as how substrate assumptions are developed. Due to the complexity of species and life stages, the proposed flows for studies may not adequately address a flow regime for a functional aquatic community. The seasonal variation of habitat utilization needs to factored into this analysis.

The applicability of habitat criteria in a bypass, tailwater reach is highly questionable, and should be subjected to validation monitoring prior to use.

10. Pollutant Source Study

Page 219. Issue A8. Water quality in Brownlee Reservoir: The study plan does not directly address this issue. This issue is better addressed in the Study Plan titled "Pollutant Transport and Processing Study".

Page 219. Issue A60. Determine the effects of all land management practices on water quality: The study plan does not address this issue.

What are the water quality pollutants to the HCC? The study plan does a good job on the characterization of water quality above and within the reservoir. However, it does not address water quality pollutants below Hells Canyon Dam.

What are the pollutant sources and pollutant loads? The study plan and interim reports does a good job identifying pollutant loads from the Snake River and upstream tributaries. The actual source or cause of the pollutant loads is not addressed.

What is the feasibility and options of reducing pollutant loads? The study plan does not address this issue.

What pollutant reductions are needed to fully support beneficial uses? The study plan does not address this issue.

11. Pollutant Transport and Processing Study

Issue A44. Nutrient cycling/processing in the impoundments. It is unclear if the CEQUAL-W2 model adequately addresses the nutrient cycling/processing in the impoundments.

Issue A22. Effects of the projects on mercury (also other heavy metals) within the system.

Issue A35. Accumulation of agriculturally based chemicals in reservoir sediment and effects on the aquatic species.

Determine the effects of the accumulation and recycling of organochlorine compounds and trace elements on the aquatic and fisheries habitat within and downstream from the Hells Canyon Complex.

Issue A32. Effects on aquatic resources and water quality due to nutrient storage buildup within all reservoirs.

Issue A47. Water temperature effects, downstream, on aquatic resources.

Issue A50. Evaluation of dissolved oxygen issues in Brownlee Reservoir when pool is low in the fall (fish kills have occurred).

Issue A66. Meet water quality objectives for listed Chinook and habitat.

The study plan does not directly address the effects on aquatic habitat and fisheries. These issues need to be integrated into those study plans dealing directly with fisheries and aquatic habitat.

Issue A41. Recreational impacts to water quality and aquatic resources (i.e. petroleum, waste dumping, oils, etc.).

Issue A56. Stormwater impacts to water quality and aquatic resources due to maintenance and new construction.

The study plan does not address these issues. It was suggested by IPC at the 3/2-3/99 AWG meeting that these issues are not significant and would not be addressed. The Forest Service would recommend that the current state of the knowledge be documented and the IPC rationale for not pursuing these issues be put into a report. This will allow peer review of IPC conclusions.

Questions to Answer identified in the "Information Needs Assessment (INA), for Pollutant Sources To Hells Canyon Complex (Nov. 6, 1999).

#4. What is the nutrient recycling and processing within the reservoirs? It is unclear if the CEQUAL-W2 model adequately addresses then nutrient cycling/processing in the reservoirs.

#5. What are the effects of dam operations on water quality in the Snake River below HC Dam?
a)The study plan states "A model for the river from Hells Canyon to Lewiston has not been selected." However, it is encouraging to see IPC is planning to address and model water temperature, dissolved oxygen, and total dissolved gas in the river downstream from Hells Canyon Dam to Lewiston. b)The study plan does not characterize or model nutrient levels and algae populations in the Snake River below Hells Canyon Dam.

#6. What are the recreational impacts (petroleum from watercraft and human waste) to water quality and aquatic resources? The study plan does not address this issue. See A56 discussion above.

#8. What are the effects of various temperature regimes on aquatic resources? The study plan does not directly address this question. These issues need to be integrated into the study plans dealing directly with fisheries and aquatic habitat.

#9. What is the feasibility and options of reducing pollutant loads?

#10. What pollutant reductions needed to fully support beneficial uses?

The study plan does not address answers to #9 and #10. While it has been suggested that this may be accomplished as part of Idaho's and Oregon's TMDL process, the Forest Service recommends that a State/IPC study plan and agreement be developed to ensure that this issue is addressed.

#11. What possible changes in dam operations can be considered to improve water temperature below HC dam?

12. Total Dissolved Gas Study

Questions to Answer as identified in the "Information Needs Assessment (INA), for Elevated Dissolved Gas Effects to Some Aquatic Species (Nov. 6, 1999).

#4. What are the options of reducing TDG below Hells Canyon Dam? Study Plan, Proposed 1999 Efforts, Task 7 states: "Identify potential protection, mitigation and enhancement (PM&E) measures for minimizing TDG levels and conduct preliminary feasibility analyses on the potential measures." However, it is unclear what this entails. For example does it involve just flow scenarios or does it involve modifications of dam facilities?

#5. What are the effects of TDG concentrations on TE&S species in the project area? The study plan does not directly address the effects on aquatic habitat and fisheries. These issues need to be integrated into those study plans dealing directly with fisheries and aquatic habitat.

Additional Study Needs As Addressed in the FS Information Needs Assessment (Nov. 6, 1999).

Anadromous

- What have been the changes to the wildlife food chain and nutrient cycling in freshwater with the loss/decline of the anadromous fish runs?
- How has the hatchery program affected wild fish runs?
- How are lamprey being affected and what habitat is available for them?
- Are the hatchery stocks genetically fit for re-introduction?
- Are all species of native fish well distributed and abundant throughout the area affected by the HCC?

Bull trout

- What are the effects of changes to bull trout food chain with the loss of anadromous fish runs?
- Relative abundance, age, size and distribution of bull trout in the Mainstem below HCC?
- What are the effects of flow fluctuations and changes in water temperatures on bull trout in the Mainstem of the Snake River and tributaries below Hells Canyon dam?
- How are fluvial bull trout from the major tributaries such as the Imnaha River utilizing the Mainstem Snake to fulfill their life history requirements?
- What are the habitat conditions for bull trout and other native species of the Mainstem of the Snake River below Hells Canyon dam?
- What is the timing of bull trout use of the Mainstem Snake River?

Game Fish

- What are crappie and small mouth bass relative numbers in the Snake River below Hells Canyon Dam?

Lamprey

- What are lamprey populations and relative distribution in the Snake River below Hells Canyon dam, the salmon river, Imnaha River, and Grande Ronde River?

Resident Fish

- What is the relative abundance and distribution of all native fish species in the Mainstem and tributaries below the HCC. (This includes all species not covered by other studies)?

Pollutant Source

- "Characterization of water quality from major tributaries going into the HCC reservoirs and Snake River Below HC Dam."
- "Characterization of the sediments near the head of Brownlee Reservoir."
- "Characterization of the nutrient recycling and processing within the reservoirs."
- "Characterization of the recreational impacts on water quality."

Pollutant Transport

Water Temperature

- Develop a study plan that characterizes the water temperature in the Snake River below Hells Canyon Dam to the Clearwater River.

- Model temperature regimes under the various flow regimes and operational scenarios from Brownlee Reservoir through the dams and downstream on the Snake River to the Clearwater River.
- Evaluate potential modifications to existing facilities that would allow dam operations to restore the warmer midsummer and cooler fall water temperatures in the Snake River below Hells Canyon Dam to its historic pre-complex levels.
- Integrate with the bull trout studies to determine what effects the water temperature in the reservoirs has on reconnecting the bull trout populations to the tributaries (example: Pine Creek and Indian Creek).
- Integrate with other aquatic studies to determine what effects the water temperature in the reservoirs has on resident fish.
- Integrate with the anadromous fish, bull trout, and other aquatic studies to determine what effects water temperature regimes have on all the life-stages of listed threatened and endangered fish species in Snake River below Hells Canyon Dam.
- Determine what effects water temperature regimes have on the aquatic food base in Snake River below Hells Canyon Dam.

Nutrients, Algae, And Dissolved Oxygen

- Determine the extent of internal recycling of sediment-bound nutrients within the reservoirs.
- Model nutrient levels (including internal nutrient recycling) and dissolved oxygen under the various flow regimes and operational scenarios through Brownlee, Oxbow, and Hells Canyon Reservoirs.
- Determine the nutrient load reductions from upstream sources that would be necessary to prevent detrimental affects to the beneficial uses within the reservoirs.
- Determine the extent of nutrient load reduction necessary to control algae blooms upstream in the Snake River and in the upper portion of Brownlee Reservoir.
- Identify the activities upstream from the Hells Canyon Complex that are contributing to the nutrient loads within the Snake River.
- Investigate and report on various in-reservoir blue-green algae control measures that may be effective in reducing algae in the lower end of Brownlee, Oxbow, and Hells Canyon Reservoirs.
- Develop a study plan that characterizes the nutrients levels in the Snake River below Hells Canyon Dam to the Grand Ronde River.
- Assess the nutrient load in the Snake River below Hells Canyon Dam on aquatic biota.
- Develop a study plan that characterizes the algae populations in the Snake River below Hells Canyon Dam to the Grand Ronde River.
- Develop a study plan that characterizes the dissolved oxygen levels in the Snake River below Hells Canyon Dam to the Grand Ronde River.
- Determine the effects of dissolved oxygen regimes on the aquatic biota and listed threatened and endangered fish species in the reservoirs.

Organochlorine Compounds And Trace Elements

- Determine the extent of resuspension and leaching of organochlorine compounds and trace elements into the water column from bed sediments.
- Determine the extent that internal reservoir recycling of organochlorine compounds and trace elements from bed sediments has on the amount that accumulates in fish tissue.

- Model organochlorine compounds and trace elements (including the internal reservoir recycling) under the various flow regimes and operational scenarios from Brownlee Reservoir through the dams and downstream on the Snake River to the Grande Ronde River.

Recreational Impacts To Water Quality

- Determine and document the recreational impacts to water quality and aquatic resources (i.e., human waste) within or adjacent to the reservoirs and downstream along the Snake River from Hells Canyon Dam to the Grande Ronde River.

Total Dissolved Gas

Modification of Existing Facilities

Evaluate and report on potential modifications to existing facilities that would reduce TDG saturation in the reservoirs and in the Snake River below Hells Canyon Dam.

- Develop and analyze reasonable engineering designs to install spillway deflectors which would reduce TDG levels during spills.
- Model TDG levels under the various flow regimes and operational scenarios through Brownlee, Oxbow, and Hells Canyon Reservoirs and downstream within the Snake River.

Effects on Aquatic Biota

- Integrate with the other aquatic biota studies to determine what effects elevated TDG regimes have on the listed threatened and endangered fish species and aquatic biota in the reservoirs and in Snake River below Hells Canyon Dam.

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Document #2

File Code: 2770

Date: November 23, 1999

Mr. Dwayne Wood, Recreation Specialist
Idaho Power Company
P.O. Box 70
Boise, ID 83707
Re: Detailed Recreation Study Plans

Dear Mr. Wood:

This letter will serve as the Forest Service response to the updated "Detailed Recreation Study Plans" (September 29, 1999). Forest Service review of the study plans is important to ensure that Forest Service direction, Policy, and Federal Laws that govern Forest Service operations are considered and incorporated into the relicensing process. We appreciate, therefore, this opportunity to review and respond to the updated study plans.

Generally speaking, many Forest Service concerns and needs have been addressed in the most recent detailed study plans. We have tried to highlight specific points of concern in this review. There are also issues, concerns and information needs that were expressed in earlier submissions to Idaho

5. Page 16, 2nd paragraph "Objective 1)" - additional needed study questions are: "What travel routes do reservoir visitors use to access the HCC and what volume of traffic is occurring? What percentage of traffic on National Forest System roads is resulting from reservoir destination or induced use? Are road standards and maintenance adequate for this mix of users and traffic volume?" One of the National Forest System roads in question is the Wallowa Mountain Loop Road #39 - needed is a baseline of total traffic use and the percentage of use attributable to recreation in the HCC.

6. Page 12, first sentence - The USFS has **some** quantifiable data on recreational use below Hells Canyon Dam from the late 1970's and qualitative data for additional earlier years**Accurate records regarding private jet boat use is reliable only from 1991 forward . Cache Creek is the main portal for jet boat use and has only been manned full-time since 1991.**

7. Page 18, There is potential for year-round use - should the survey be expanded to include the spring season?

8. Page 18, 3.2.5 Methods, 4th paragraph of recreation use data collection plans for 2000: Also need traffic counters to determine use levels at various key locations in and adjacent to the HCC. Counters on mid and upper slope roads will be needed to help determine the portion of National Forest road use attributable to recreation in the HCC. To best obtain useful user profile information, need some expansion of demographic and economic questions. A Forest Service economist could help frame the few additional questions that would be beneficial. Also needed is determination of the amount of use occurring at National Forest recreation sites in and adjacent to the HCC. The Forest Service would like to know how many HCC recreationists are also utilizing adjacent National Forest lands, sites and facilities. Is crowding on the reservoirs displacing campers to nearby National Forest campgrounds and dispersed camping sites? The primary recreation sites of concern on adjacent National Forest lands include: Brownlee and Lake Fork Campgrounds, nearby National Forest system trails, and dispersed camping sites along North Pine Creek. At this time, based on recent Forest Service records, we estimate that 60% of the use at the two campgrounds and at the North Pine Creek dispersed sites are directly related to reservoir users.

9. Page 26, a sentence should be added to the second paragraph that is similar to #6. During the 1994 planning process a 40% compliance rate was used for private powerboating prior to 1991. Cache Creek is the main portal for jet boat use and has only been staffed full-time since 1991.

10. Page 31 & 32, "Objective 1)" portion - Additional considerations include: How do HCRC recreationists react to crowding? Where are they displaced to, and why? Do they see using adjacent National Forest System land campsites as an acceptable remedy to crowded camping conditions on the reservoirs? When they encounter crowded conditions on the reservoirs, how many users/recreationists leave the area completely?

11. Page 47, "Objective 8)" portion - "How will future deviations from acceptable limits be addressed?" Additional considerations include: What is the trigger point to implement site or facility enhancement, reconstruction and/or construction? What combination of physical site and social conditions will make up the trigger point?

12. Page 64, 3.8.3, Objectives and Study Questions - Additional considerations: To what degree is timing, extent and rate of water level fluctuation a concern? Are small frequent fluctuations more desirable than less frequent but larger fluctuations? What is the lowest acceptable water level?

13. Page 88, Methods - Possible additional sources of use information are: the existing trail registers now set up at several trailheads in the HCC area, and the IDFG Cecil Andrus Wildlife Management Area Office on Highway 72. The Forest Service would like better information on the extent of reservoir related recreation use in the Hells Canyon Wilderness, including trail and boat in bird hunting.

We appreciate the efforts of IPC in completing these study plans, and will continue to work with the Recreation RWG to help develop protection, mitigation, and enhancement measures that are consistent with forest plan direction. Our expectation is that IPC will incorporate our comments into the current planning process with the objective of minimizing the need for Additional Information Requests upon completion of the Draft License Application.

If you have any questions or concerns regarding these comments, please contact Lynn Roehm, Hydro Coordinator at (541) 523-1316.

Sincerely,

/s/Kurt Wiedenmann
KARYN L. WOOD
Forest Supervisor

cc: Service List
IDT

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Document #3

United States
Department of
Agriculture

Forest
Service

Wallowa-Whitman National Forest 1550 Dewey Ave.
P.O. Box 907
Baker City, OR 97814

File Code: 2770

Date: January 10, 2000

Mr. Allen Ansell
Idaho Power Company
P.O. Box 70
Boise, ID 83707

Re: Cultural Resource Study Plans (FERC No. 1971)

Dear Mr. Ansell:

Thank you for the additional opportunity to comment on Idaho Power's Cultural Resource Study Plans (8.4.1. through 8.4.8) for the Hells Canyon Complex. The following comments are a general summary of ideas presented by the Forest Service at the Cultural Work Group meeting in Pocatello, Idaho on December 1, 1999, as well as group comments generated by our staff archaeologists upon further review of the Study Plans.

At present there is a concern that a lack of survey work on private land within Idaho Power's permit area will not allow us to meet the basic legal requirement that we take into account the potential effects of the permit on historic properties. This consideration of effects is not limited to public lands. As an advocate of resource stewardship, in addition to its relicensing partnership with Idaho Power, we feel this issue may potentially affect Idaho Power's ability to successfully negotiate the relicensing process.

Our comments regarding the operational elements of the eight Study Plans are limited to general suggestions at this time. While the basic ideas expressed in each Study Plan have merit, the Forest Service does not understand the methodology used to arrive at the standards found in each Plan. As an example, information is not presented as to how the specific transect intervals, slope exclusion zones, and probability areas were chosen as parameters guiding cultural resource inventories in the Hells Canyon Complex permit area. These parameters are normally outlined in a detailed cultural resource inventory plan which explains an inventory methodology. As these surveys are occurring on Forest Service land, we are anxious to understand how they will achieve identification of all locatable cultural resources within the archaeologically and topographically unique permit area. Similar types of questions were raised by our staff for each of the Study Plans. Of particular concern is the lack of clear, concise, and consistent methodologies for data collection under each of the study plans. While we can appreciate IPC's desire to give professional investigators some latitude in field procedures, those procedures must be clearly stated in order for the resulting data to be of use to future researchers. In general, the study plans lack definition and rationale for the selection of particular studies. We remain concerned that these plans will not achieve the collection of all the necessary information mandated by federal law. One possible solution would be to prepare an introductory section (8.4.0) to explain the purposes of the several study plans in relation to the various public laws.

We look forward to our continuing work with Idaho Power, and all our relicensing partners, in resolving these and other matters being discussed by our relicensing work groups. If you have any questions, please contact our Forest FERC Coordinator, Lynn Roehm, at (541) 523-1316.

Sincerely,

/s/ Kurt Wiedenmann (for)

KARYN L. WOOD
Forest Supervisor

Caring for the Land and Serving People